National Nuclear Security Administration

memorandum

DATE: January 31, 2007

REPLY TO

ATTN OF: Y12-50:Sundie

SUBJECT: STAFFING PLAN FOR THE NATIONAL NUCLEAR SECURITY ADMINISTRATION

Y-12 SITE OFFICE

TO: Roy Schepens, Chairman, Federal Technical Capability Panel, RL

Reference: Memorandum dated September 6, 2006, from Federal Technical Capability Panel

Chairman to Agents, Annual Workforce Analysis and Staffing Plan Report for Calendar

Year (CY) 2006

We have completed our analysis of staffing needs per the guidance in the referenced memorandum. Our revised staffing plan for the Y-12 Site Office is attached.

Should you have any questions, please contact Dan Hoag at (865) 576-0511.

Theodore D. Sherry

Manager

Y-12 Site Office

Attachment: As Stated

cc w/attachment: Kevin Smith, Y12-01, YSO James Martin, Y12-10, YSO Kenneth Ivey, Jr., Y12-20, YSO Terry Olberding, Y12-30, YSO Daniel Hoag, Y12-40, YSO Douglas Dearolph, Y12-50, YSO Alexander Eirich, Y12-60, YSO

Annual Workforce Analysis and Staffing Plan Report As of December 31, 2006 Reporting Office: Y-12 Site Office

Section One: Current Mission(s) of the Organization and Potential Changes

- A. The Y-12 Site Office (YSO) mission is to support National Security in the manufacture and rework of nuclear weapon components, dismantle nuclear weapon components returned from the military, serve as the nation's warehouse for enriched uranium, provide special production support to other programs, support Nuclear Nonproliferation initiatives, and support other federal agencies through the Work for Others Program. To accomplish these missions, the following (non-exclusive) activities are conducted:
 - Maintain technical capability for nuclear weapons development and production;
 - Dismantle nuclear weapons subassemblies;
 - Manage the processing and storage of highly enriched uranium and lithium for Defense Programs;
 - Maintain all facilities in support of assigned programs;
 - Effectively re-manufacture, surveil and assess all uranium, lithium, and secondary components in the nuclear stockpile while protecting personnel and the environment;
 - Store, process, and disposition uranium, lithium, and secondary components associated with the nuclear stockpile;
 - Conduct Nuclear Nonproliferation activities; and
 - Other programs as assigned
- B. The YSO is currently working on new or changing missions as follows:
- Significant efforts are underway at Y-12 to achieve a modernized factory that is responsive, efficient, and cost effective in meeting the missions of NNSA, the latest design basis threat (DBT) policy and that complies with modern codes, standards, and ES&H regulations. The focal point of the modernization effort is the consolidation of all enriched uranium in the Highly Enriched Uranium Materials Facility (storage) or the Uranium Processing Facility (manufacturing). This will reduce the high-security area by 90% and will reduce operating cost by approximately \$150M per year. A new security fence will enclose the two facilities. Y-12 will also be required to accelerate the dismantlement of weapon components and consolidate some operations and nuclear material into a smaller footprint in order to fully support the modernization vision and implement the design basis threat guidance.
- Due to the magnitude and complexity of the modernization effort, on-site oversight is necessary to ensure requirements are met. Activities requiring YSO oversight include multiple line item projects, expense projects, and consolidation initiatives to implement the modernization vision and DBT implementation. Project directors perform oversight of line item and expense projects while program managers perform oversight of dismantlement and the consolidation of operations and nuclear material. Project directors and program managers are supported by matrix organizations that provide expertise in authorization bases, safeguards and security, operations, startup/readiness, safety and health, and finance and contract management.
- Production readiness and capacity are being driven by the "New Triad" of flexible response capabilities established by the Nuclear Posture Review. A reduction in the future stockpile is expected to be complemented by an infrastructure that is capable of responding to unforeseen problems in the stockpile or emerging threats that would require new capabilities. The current stockpile is expected to be replaced overtime by reliable replacement warheads (RRW). This migration to reliable replacement warheads and a responsive infrastructure will require additional YSO oversight. Additionally, a Y-12 Throughput Improvement Plan has been established which identifies a large number of improvements required in the factory in order to support the increased production requirements. The increased focus and emphasis in this area will require additional YSO oversight.
- The Y-12 National Security Complex provides support to virtually all of the NNSA nonproliferation programs. As the NNSA representative in Oak Ridge, YSO is involved with oversight, coordination and providing contractor direction and performance evaluation. Among the Nonproliferation programs supported are the HEU Transparency implementation Program, Global Threat Reduction Initiative, International Material Protection and Cooperation, Nuclear Cities Initiative, International and Domestic Fissile Materials Disposition Programs, IAEA inspections, Export Control, Second Line of Defense, compliance with START treaties, and Russian Strategic Rocket Forces activities. It is expected that the Y-12 involvement in these programs will increase substantially over the coming years.
- Plans are to consolidate the manufacturing operations into a smaller facility "footprint" to allow more efficient and integrated operations. This consolidation will also extend to the security PIDAS, which will be modified to maintain only those areas in

the revised footprint. This will involve a series of projects of sufficient magnitude and complexity that on-site oversight is necessary to ensure requirements are met.

- Additional startup and/or restart activities will result from modernization efforts. YSO is working to both clearly define roles
 and responsibilities within each organization and to standardize the startup/restart process to facilitate efficiency and cost
 effectiveness. For these reviews, as minimum, technical individuals from the Operations Management, Programs, Safeguards
 & Security, and Engineering, Safety, and Environment organizations are required to evaluate the contractor's state of
 readiness. YSO will also utilize the NNSA Service Center to supplement and/or support these efforts.
- Y-12 has transferred the waste management function and facilities. In FY06, ORO detailed two individuals to YSO to perform the Facility Representative and Program Manager functions for these facilities; these individuals became permanent staff positions in FY07. The baseline staffing level was increased to 86 FTEs as a result.
- In FY2006, YSO added two individuals from the NNSA Future Leaders (FL) Program, bringing the total number to 4 as entry-level engineering positions in the Operations Management, Project Directorate, and Program Management groups. These positions are not counted in the 86 FTE baseline level. These positions are funded separately for the first 2-year period while they complete a prescribed training program. At the end of FY2008, the positions will be counted against the YSO baseline at that time. Both the FY06 Future Leader Candidates will participate in the Technical Qualification Program in the Technical Program Manager functional qualification area. Assignment of additional future leader candidates is being pursued in the Operations, Engineering, Safety, and Environment, and Safeguards & Security area of YSO. All Future Leaders will be converted to YSO employees after completing the 2 year FL program.

Section Two: Technical Staffing
Number of Hazard Category 1, 2, or 3 Nuclear Facilities:
HC 1 0 HC 2 10 (See Note 3) HC 3 5
Number of Radiological Facilities: 61
Number of High or Moderate Hazard Non-Nuclear Facilities:
Number of Low Hazard Non-Nuclear Facilities:
Number of Documented Safety Analyses: 15 (See Note 3)
Number of Safety Systems ² : 105 (See Note 3)
Number of Site Contractor FTEs: 7000
Number of Federal Office FTEs: 86
 Facilities, systems, personnel and authorities listed should be those in the organization's immediate line authority. The YSO list includes Federal Staff, Future Leaders, and Support Contractors. Safety Systems must be credited in the DSA or be a recognized defense in depth system. This number includes data anticipated for the HEUMF facility, which is currently under construction.

	For All F		Comments		
TECHNICAL CAPABILITY	Number of FTEs Needed ¹	Number of FTEs Onboard ¹			
Senior Technical Safety Managers	7	7	Qualifications in progress for the Deputy Manager and Lead Project Director		
Safety System Oversight Personnel ³	8	5	HVAC and 2 Fire Protection FTEs currently gapped. Support from Service Center needed. Recruitment in progress for Fire Protection Engineer		
Facility Representatives	12	12	Interim Quals in progress for 2 recent additions; FL in training		
Other Technical Capabilities:					
Authorization Basis Engineers	5	5	Currently recruiting a Future Leader Start in FY08; 1 FTE covered by support contractor		
Chemical Processing	0	0	Functions covered by SSO		
Civil/Structural Engineering	0	0	Functions covered by Project Managers		
Construction Mgmt	0	0	Functions covered by Project Managers		
Criticality Safety	2	2	1 FTE covered by service contractor.		
Electrical Systems	0	0	Functions covered by SSO		
Emergency Management	1	1	·		
Environmental Compliance	1	1			
Facility Maintenance Mgmt	1	i			
Fire Protection Engineering	0	0	Function covered by SSO		
Industrial Hygiene	0	0	Individual retired, function rolled into Occupational Safety position		
Instrumentation and Control	0	0	Functions covered by SSO		
Mechanical Systems	0	0	Functions covered by SSO		
Nuclear Safety Specialist	0	0	Performed by AB Engineers		
Occupational Safety	1	1			
Operations Engineer	1	1	FL in training		
Lead Operations Engineer	1	1			
Lead Quality Assurance Engineer	1	1			
Weapons QA Specialist	2	2			
Weapons QA Engineer	1	1			
Quality Assurance	1	1			
Radiation Protection	1	1			
Senior Technical Program Manager	4	4			
Safeguards and Security	9	8	Functions covered by existing staff		
NMC&A Specialist	2	2			
Cyber Security Specialist	3	3			
Safety Software Quality Assurance	0	0	Function covered by Weapons QA specialist		
Technical Program Manager	5	5	FL in training		
Technical Training	2	2	1 FTE covered by support contractor		
Transportation & Traffic Mgmt	0	0	Function covered by Emerg. Mgmt. Engineer		
Waste Management	0	0	Functions covered by Environmental Compliance		
Senior Project Director	5	5	Qualifications in progress for 1; the Lead Project Director		
Project Director	4	4	Qualifications in progress for 3 Project Directors; 1 FL in training		
Senior Nuclear Engineer	1	1			

Section Two: Technical Staffing (continued)

The basis for the YSO Technical staffing summary staffing levels was determined utilizing the methodology guidance provided to the FTCP Agents. The YSO analysis was subdivided into the following groups.

- 1. Facility Representatives The process for determination of the appropriate amount of FR oversight is an analytical method given the facility hazard level, operational activity and complexity, and programmatic importance.
- 2. Safety System Oversight Engineers -- The process for determination of Safety System Oversight (SSO) staffing levels is based on and adapted from the process used to determine Facility Representative staffing levels. For YSO, these positions consist of Chemical Process Engineer, Instrumentation Engineer, Metallurgical Engineer, 2 Heating, Ventilation, and Air Conditioning (HVAC), 2 Fire Protection, and Senior Systems Engineer.
- 3. Technical Qualification Program -- The process for determination of Technical Qualification Program (TQP) staffing levels is based on and adapted from the process used to determine Facility Representative and Safety System Oversight (SSO) staffing levels. The TQP staff consists of federal personnel qualified to a Functional Area Qualification (FAQ) Standard that is needed over and above the facility representatives, the SSO staff, the safety management program oversight staff, and the senior technical safety managers to ensure operational safety and mission accomplishment. The YSO TQP was further subdivided into the following groups.
 - a. Senior Technical Safety Managers
 - b. Operations Management Operations, Maintenance, Training, Weapons Quality Assurance, Software Quality Assurance, Facility Quality Assurance
 - c. Safeguards & Security Physical, Cyber, Information, Industrial, and NMC&A
 - d. Technical Program Managers
 - e. Senior Project Directors/Project Directors
 - f. Technical Subject Matter Experts Authorization Basis, SSO, Industrial Hygiene, Environmental, Fire Protection, Radiological Protection, Emergency Preparedness, and Transportation
- 4. The analysis was performed in each of these areas and the results documented in Table 1.
- 5. Senior Technical Safety Manager (STSM) The process for determination of STSM positions was made based on YSO's organizational structure. YSO Senior Management unilaterally determined that all senior technical positions would qualify as an STSM. Consequently, the 7 designated STSM positions in YSO are the Manager, Deputy Manager, and the Assistant Managers for Operations Management, Programs, Engineering, Safety, and Environment, Project Directorate, and Safeguards & Security.
- 6. In the process of performing these staffing analyses, consideration was made to situations where the SSOs, FRs, and SMEs provide assistance to each other to meet oversight responsibilities without increasing the number of FTEs. An example would be the Radiological Control Engineer performing a Conduct of Operations walkthrough of the Dosimetry facility.

Section Three: Current shortages and plans for filling them

The following are the anticipated shortages for YSO in the <u>critical technical capabilities/positions</u>. These positions are contingent upon retaining current staff.

- 1. Authorization Basis Engineer Currently using a support contractor to perform the function; will recruit a federal employee in FY08.
- 2. Safety System Oversight personnel (3 FTEs, 2 FTEs NOT in the baseline FTE target) The positions consist of 2 Fire Protection Engineers and an HVAC Engineer; one Fire Protection Engineer position will be filled in FY07 and plans are to fill one Fire Protection Engineer position with a Future Leader in FY08. These positions are needed to support the two major projects (HEUMF and UPF) as they progress through design, construction, and operation.
- S&S Systems Engineer (NOT in the baseline FTE target) This position is needed to support the S&S review and oversight of all Y-12 projects and serve as the OAMSS Program Manager for S&S projects. YSO plans to recruit a Future Leader to fill this position in FY08.
- 4. <u>Criticality Safety Engineer (NOT in the baseline FTE target) Currently using a support contractor to perform the function; plans are to recruit a Future Leader in FY07.</u>
- 5. Technical Training (NOT in the baseline FTE target) YSO plans to maintain coverage of this function with a support service contractor.

Section Four: Projected shortage/surplus over next five years

The following are projected shortages in the <u>technical capabilities/positions</u> to be filled in fiscal years 2008 through 2013. This position is contingent upon retaining current staff. The shortages are relative now and will increase as the two major projects (HEUMF and UPF) continue to progress through design, construction, and operation

- 1. <u>Safety System Oversight personnel</u> (2 FTEs, NOT in the baseline FTE target) These positions are needed to support the two major projects (HEUMF and UPF) as they progress through design, construction, and operation.
- 2. <u>S&S Systems Engineer</u> (NOT in the baseline FTE target) This position is needed to support the S&S review and oversight of all Y-12 projects and serve as the OAMSS Program Manager for S&S projects. Major line item projects (e.g. SIP, HEUMF, UPF, Purification) and other major projects (e.g. Off-Site Records Storage Facility, alternate financed facilities, material consolidation project) have involved substantial support from OAMSS staff. Inadequate staffing has allowed only superficial participation in several project reviews requested by YSO Project Managers over the past year. This situation will only get worse over the next several years as the various projects evolve through the design, construction, and start-up phases. The position also needed to provide program management for S&S Technology Deployment projects involving first-of-a-kind deployments as the Y-12 point-of-contact with DOE/NNSA HQ, other sites, and other agencies. As DOE/NNSA/Y-12 proceeds with implementing future S&S requirements, the reduction of protective forces and associated costs to be gained by the deployment of technologies will be increasingly important. Current YSO staffing has only allowed superficial participation in several key technology project reviews at Y-12 or other sites related to actual or potential deployments. Successful completion of these tasks is needed to meet future DBT requirements and for more cost effective operations.

YSO PROJECTED NEEDS AND RECRUITMENT PLANS

Additional YSO Staffing (Not included in the baseline FTE target number)

Positions	FY2007		FY2008		FY2009		FY2010		Comments	
	Needed	On Board	Needed	On Board	Needed	On Board	Needed	On Board		
Waste Management Facility Rep	1									
Waste Management Program Manager	1	1								
Authorization Basis Engineer			1	0					Needed to support additional facilities: HEUMF, UPF and related transportation activities	
Safety System Oversight	2	0							These positions will be a Fire Protection Engineer and an HVAC Engineer	
Criticality Safety Engineer	-1	0							Fill with Future Leader	
Technical Program Manager			1	ı					Future Leader on board, currently in training	
Operations Engineer			1	1					Future Leader on board, currently in training	
Facility Representative	1	1			·				Future Leader on board currently in training	
Project Director	1	1							Future Leader on board currently in training	
S&S Systems Engineer					1	0			Fill with S&S Future Leader	

The following table summarizes YSO staffing activities for Future Leader Positions.

Positions	FY2005	FY2006	FY2007	FY2008	FY2009
Authorization Basis				Recruit in FY08	
Engineer					
Criticality Safety			Recruit in FY07		
Engineer					
Technical Program		Recruited 7/06 for			
Manager		need in FY08			
Operations Engineer		Recruited 7/06 for			
		need in FY08			
Facility Representative	Recruited 7/05				
	for need in				
	FY07				
Project	Recruited 7/05				
Director	for need in				
	FY07				
S&S Systems Engineer				Recruit in FY08	
				D 11 EXTOR	<u> </u>
Safety System				Recruit in FY08	
Oversight (Fire					
Protection)					

Section Five: General concerns or recommendations related to the Technical Staffing

- 1. Technical support contractor effort in FY 2007 will be determined based on funding available, estimated to be \$800k. Allocation of 3.5 FTEs is as follows: 1.0-Technical Training; 0.5-Programs; 1-Criticality Safety; and 1-Authorization Basis.
- 2. Support from the NNSA Service Center and ORO in many areas is required.
- 3. The project staffing analysis demonstrates the need for eight Project Directors and one Lead Project Director on average from 2006 through 2014. Currently, eight project directors are on board including one position in the Future Leaders Program. The project staffing approach assumes successful implementation of a project management support services contract for HEUMF, UPF, and CMC, and a mature contractor assurance (self-assessment) system.
- 4. As stated in this plan, the YSO target staffing level baseline does not include positions for the Future Leader Candidates. Two Future Leader Candidates will complete their training program in July 2007. Absorption of Future Leaders will create staffing overages, due to a lack of authorized FTE positions.

6.0 Concurrence and Approval

Concurrence:

Daniel K. Hoag, Assistant Manager Operations Management and FTCP Agent

Terry B. Oberding, Assistant Manager Programs

James R. Martin, Assistant Manager Administration

Kevin W. Smith, Deputy Manager Y-12 Site Office

Approval:

Theodore D. Sherry, Manager Y-12 Site Office

Douglas J. Dearolph, Assistant Manager Engineering, Safety, and Environment

Kenneth D. Ivey, Jr., Assistant Manager Safeguards & Security

Alexander J. Eirich, Difector Project Directorate

Attachment

YSO Staffing Summary of Full Time Employees (FTEs)

	No. of	No. of	No. of	Sub	No. of	Number of	Anticipated	Total
	Technical	Administrative	Vacancies	total	Support	Encumbered	Needs	
	Federal	Federal	(within		Service	Future	(outside	
	Employees	Employees	target)		Contractors	Leaders	target)	
İ	69	15	2	86	3.5(1.5)*	4	5	96.5*

^{*}Number will be reduced by one, when AB Future Leader recruited and trained; only one FTE counted in overall total.

YSO FY2006 Staffing Ceilin Position	Encumbered	Vacancy	Subtotal	Above Target Needs	Future Leaders	Contractor Support	Total
Senior Technical Safety	7		7				7
Managers	1						
Senior Administrative Assistant	1		1				1
Administrative Assistants	3		3				3
Performance Assurance	1		1				1
Manager	·						
Public Information Officer	1		1				11
Site Counsel	1		1				1
Assistant Manager for	1		1				1
Administration							
Management Analyst	1		1				1
Budget Analyst	3	1	3				3
Financial Analyst	1		1				1
Program Manager	1		1				1
Contracting Officer	1	1	2				2
Facility Representatives	11	 	11		1		12
Lead QA Engineer	1		1 1	<u> </u>			1
Weapons QA Specialist	2	+	2				2
Weapons QA Specialist Weapons QA Engineer	1	-	1				1
	1	 	1				1
Lead Operations Engineer	0	 	0		1		1
Operations Engineer	1		1 1	· · · · · · · · · · · · · · · · · · ·	 		1
Maintenance Engineer		-	1	 	<u> </u>	1	2
Technical Training	1 1	-	1	 		,	1
Facility QA Engineer	1		1		 		1
Radiological Control Engineer	11	 	1				1
Senior Safety Engineer	11	ļ					1
Environmental Compliance	1	İ	1				'
Engineer		ļ			-		1
Emergency Management	1		1				'
Engineer			 				1
Senior Criticality Safety	1		1		i		'
Engineer			 		1 (FY07)	1*	1
Criticality Safety Engineer	0		0		1 (1-107)	1 1	+ +
Lead Process Engineer	11		1 1	4	1/5/09		7
Safety System Oversight	4	1	5	11	1(FY08)	1*	5*
Authorization Basis Engineer	4		4		1 (FY08)	<u> </u>	4
Senior Program Manager	4		4			0.5	5.5
Program Manager	4		4		1 1	0.5	
Senior Project Director	4		4				4
Project Manager	3		3		11		4
Senior Nuclear Engineer	11		1 1				1 1
NMC&A Specialist	2		2				2
Security Technical Advisor	1		11				1
Physical Security Specialist	2		2				2
Information Technology	1		1				1
Specialist							1
Classification Officer	1		1				1 1
Information Security Specialist	1		1				1
Firearms Safety	1		1				1 1
Industrial Security Specialist	1		1				11
Security Systems Engineer	1		1		1 (FY08)		2
Cyber Security Specialist	1		1				1
HRP Administrator	1		1				1
TOTALS	84	2	86	1	8	3.5(1.5)*	96.5

^{*}Number of Support Contractors will be reduced by one when Future Leader recruited and trained, only one FTE counted in overall total.